An Anſwer to Four Papers of Mr. Hobs, *lately Publiſhed in the Months of* Auguſt, *and this preſent* September, 1671.

In the former part of his firſt Paper;

BY reaſon of a Propoſition of Dr. *Wallis* (*Prop.* 1. *Cap.* 5. *De Motu*) to this purpoſe (for he doth not repeat it *Verbatim*:) *If there be ſuppoſed a row of Quantities infinitely many, increaſing according to the natural Order of Numbers*, 1, 2, 3, &c. *or their Squares*, 1, 4, 9, &c. *or their Cubes*, 1, 8, 27, &c. *whereof the laſt is given. It will be a row of as many, equal to the laſt, in the firſt caſe, as* 1 *to* 2; *in the ſecond caſe, as* 1 *to* 3; *in the third, as* 1 *to* 4, &c. (Where all that is affirmed, is but; *If we SVPPOSE That; This will Follow.* Which Conſequence Mr. *Hobs* doth not deny: and therefore all that he ſaith to it, is but Cavilling.)

Mr. *Hobs* moves theſe Queſtions, (and propoſeth them to the *Royal Society*, to paſs a judgment on them.) 1. *Whether there can be underſtood* (he ſhould rather have ſaid, *ſuppoſed*) *an infinite row of Quantities, whereof the laſt can be given.* 2. *Whether a Finite Quantity can be divided into an Infinite Number of leſſer Quantities, or a Finite quantity conſiſt of an Infinite Number of Parts.* 3. *Whether there be any Quantity greater than Infinite,* 4. *Whether there be any Finite Magnitude of which there is no Center of Gravity.* 5. *Whether there be any Number Infinite.* 6. *Whether the Arithmetick of Infinites be of any uſe, for the confirming or confuting any Doctrine.*

For anſwer. In general, I ſay, 1. Whether thoſe things *Be* or *Be not*; yea, whether they *Can* or *Cannot be*; the Propoſition is not at all concerned, (which affirms nothing either way;) but, whether they can be *ſuppoſed*, or made the *ſuppoſition*, *in a conditional Propoſition.* As when I ſay, *If* Mr. Hobs *were a Mathematician, he would argue otherwiſe*; I do not affirm that either *he is*, or ever *was*, or *will be* ſuch. I only ſay (upon ſuppoſition) *If he were*, what he is not; he would not do as he doth. 2. Many of theſe *Quære's* have nothing to do with the Propoſition: For it hath not one word concerning *Gravity*, or *Center of Gravity*, or *Greater than Infinite.* 3. That uſually in *Euclide*, and all after him, by *Infinite* is meant but, *More than any aſſignable Finite*, though not Abſolutely Infinite, or the greateſt poſſible. 4. Nor do they mean, when Infinites are propoſed, that they ſhould *actually Be*, or be *poſſible to be performed*; but only, that they be *ſuppoſed*. (It being uſual with them, upon *ſuppoſition* of things *Impoſſible*, to infer uſeful Truths.) And *Euclide* (in his ſecond *Poſtulate*) requiring, *the producing a ſtreight line Infinitely, either way*; did not mean, that it ſhould be *actually performed*, (for it is not poſſible for any man to produce a ſtreight line Infinitely;) but, that it be *ſuppoſed*. And if AB * be *ſuppoſed* ſo produced, though but one way; its length muſt be *ſuppoſed* to become *Infinite* (or *more than any Finite length aſſignable*;) For, if but *Finite*, a Finite production would ſerve. But, if ſo produced both ways; it will be yet *Greater*, that is, *Greater than that Infinite*, or Greater than was neceſſary to make it more than any Finite length aſſignable. (And whoever doth thus *ſuppoſe Infinites*; muſt conſequently *ſuppoſe*, *One Infinite greater than another*.) Again, when (by *Euclide's* tenth Propoſition) the ſame AB *, may be *Biſected* in M. and each of the halves in *m*, and ſo onwards, *Infinitely*: it is not his meaning (when ſuch continual ſection is propoſed) that it ſhould be *actually done*, (for, who can do it?) but that it be *ſuppoſed*. And upon ſuch (*ſuppoſed*) ſection *infinitely continued*, the parts muſt be (*ſuppoſed*) *infinitely many*; for no *Finite* number of parts would ſuffice for *Infinite* ſections. And if further, the ſame AB ſo divided, be *ſuppoſed* the ſide of a Triangle ABC *; and, from each point of diviſion, *ſuppoſed* lines (as mc, Mc, &c.) parallel to BC: theſe parallels (reckoning downward from A to BC) muſt conſequently be (*ſuppoſed*) *infinitely many*; and thoſe, in *Arithmetical progreſſion*, as 1, 2, 3, &c. each exceeding its Antecedent as much as that exceeds the next before it;) and, *whereof the laſt* (BC) *is given*: (and their Squares, as 1, 4, 9, &c. their Cubes, as 1, 8, 27, &c.) And this I ſay, to ſhew that the *ſuppoſition of Infinites* (with theſe attendants) is not ſo new, or ſo *Peculiar* to *Cavallerius* or Dr. *Wallis*, but that *Euclide* admits it, and all Mathematicians with him; as at leaſt *ſuppoſable*, whether *Poſſible* or not.

* See *Tab.* I. *n.* II.

* See *Tab.* I. *n.* III.

* See *Tab.* I. *n.* IV.

In particular, therefore, to his *Quære's*, I anſwer, 1. There may be *ſuppoſed* a row of Quantities *Infinitely many*, and *continually increaſing*, (as the ſuppoſed parallels in the Triangle ABC, reckoning downwards from A to BC,) *whereof the laſt* (BC) *is given*. 2. A Finite Quantity (as AB) may be *ſuppoſed*

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(by ſuch continual Biſections) diviſible into a number of parts *Infinitely many* (or,more than any Finite number aſsignable:) For there is no ſtint beyond which ſuch diviſion may not be *ſuppoſed* to be continued; (for ſtill the laſt, how ſmall ſoever, will have two halves.) And, all thoſe Parts *were in* the Undivided whole; (elſe,where ſhould they be had?) 3. Of *ſuppoſed* Infinites,one may be *ſuppoſed* greater than another: As a, *ſuppoſed*,infinite number of *Men*,may be *ſuppoſed* to have a *Greater* number of eyes. 4. A ſurface, or ſolid, may be *ſuppoſed* ſo conſtituted, as to be *Infinitely Long*, but *Finitely Great*, (the Breadth continually Decreaſing in greater proportion than the Length Increaſeth,) and ſo as to have *no Center of Gravity*. Such is *Toricellio's Solidum Hyperbolicum acutum*; and others innumerable,diſcovered by Dr.*Wallis*, Monſieur *Fermat*,and others. But to determine this,requires more of *Geometry and Logick* than Mr.*Hobs* is Maſter of. 5. There may be *ſuppoſed* a number *Infinite*; that is, greater than any aſsignable Finite: As the *ſuppoſed* number of parts, ariſing from a *ſuppoſed* Section *Infinitely continued*. 6.There is therefore no reaſon,on this account, why the Doctrin of *Euclide*, *Cavallerius*, or Dr. *Wallis*, ſhould be rejected as of no uſe.

But having ſolved theſe *Quære's*, I have ſome for Mr. *Hobs* to anſwer, which will not ſo eaſily be diſpatched by him. For though *Suppoſed Infinites* will ſerve the Mathematicians well enough: yet, howſoever he pleaſe to prevaricate (which, he ſaith,is *for his Exerciſe*,) Mr.*Hobs* himſelf is more concerned than they,to ſolve ſuch *Quære's*. Let him ask himſelf therefore, if he be ſtill of opinion,that *there is no Argument in nature to prove, the World had a Beginning*: 1. Whether,in caſe it had not, there muſt not have paſſed an *Infinite number of years* before Mr. *Hobs* was born. (For,if but *Finite*,how many ſoever,it muſt have begun ſo many years before.) 2. Whether,now, there have not paſſed *more*; that is,*more than that infinite* number. 3. Whether, in that *Infinite* (or *more than infinite*) number of *Years*, there have not been a *Greater* number of *Days* and *Hours*: and, of which hitherto,*the laſt is given*. 4. Whether,if this be an Abſurdity, we have not then (contrary to what Mr. *Hobs* would perſwade us) an *Argument in nature* to prove,*the world had a beginning*. Nor are we beholden to Mr.*Hobs* for this Argument; for it was an Argument in uſe before Mr.*Hobs* was born. Nor can he ſerve himſelf (as the Mathematicians do) with *ſuppoſed Infinites*; For his Infinites, and more than Infinites of Years, Days, and Hours, *already paſt*, muſt be *Real Infinities*, and which have *actually exiſted*, and whereof the *laſt is given*; (and yet there are more to follow.) Mr. *Hobs* ſhall do well, (for his Exerciſe) to ſolve *theſe*, before he propoſe more *Quære's* of *Infinites*. And this I ſay, to ſhew that Mr. *Hobs* is, as much as any, concerned to ſolve the *Quære's* by himſelf propoſed.

In the latter part of his firſt Paper,

HE gives us (out of his *Roſet. Prop.* 5.) this Attempt of *Squaring the Circle. ſuppoſe* DT *be* $\frac{2}{5}$DC, *and* DR *a mean proportional between* DC *and* DT: *the Semidiameter* DC *will be equal to the Quadrantal Arc* RS, *and* DR *to* TV.

That the thing is falſe, is already ſhewed in the Latin Confutation of his *Roſetum*, publiſhed in the *Philoſophical Tranſactions* for *July* laſt paſt.

As it is now in the Engliſh; his Demonſtration is peccant in theſe words, (*Col.* 2. *lin.* 31, 32, 33.) *Therefore -- the Arc on* TV, *the Arc on* RS, *the Arc on* CA, *cannot be in continual proportion*; (with all that follows:) There being no ground for ſuch Conſequence.

And the thing is manifeſt *; for ſince that, by his conſtruction,
DC.CA.Arc on CA extended ∺ } are *in the ſame cantinual pro-*
DR.RS.Arc on RS extended ∺ } *portion, of the Semidiameter*
DT.TV.Arc on TV extended ∺ } *to the Quadrantal Arc*;

Let that proportion be *what you will*; ſuppoſe, as 1 to 2; and conſequently, DC to CA being as 1 to 2, it will be to the Arc on CA, as 1 to 4: And by the ſame reaſon, DR to the Arc on RS, and DT to the Arc on TV, muſt alſo be as 1 to 4: And therefore the Arcs on TV, on RS, on CA; that is, 4 DT, 4 DR, 4 DC; will be in the ſame proportion to one another, as (their ſingles) DT, DR, DC: But theſe (by conſtruction) are in continual proportion; therefore thoſe Arcs alſo, as they ought to be. Indeed, if (by changing ſome one of the terms) you deſtroy (contrary to the Hypotheſis) the continual proportion of DT, DR, DC, you will deſtroy that of the Arcs alſo (which are ſtill proportional to theſe:) but ſo long as DT, DR, DC, be in *any* continual proportion

* See *Tab.* 1. *n.* V.

portion (whether that by him aſsigned or any other) thoſe will be in the ſame continual proportion with them. As if for DT, DR, DC, be taken Dt, Dr, DC, in any continual proportion (greater, leſs, or equal to his) the Arcs on *tu*, on *rs*, on CA, (extended) will be in the ſame continual proportion.

But (which is the common fault of Mr. *Hobs*'s Demonſtration) if this Demonſtration were good, it would ſerve as well for any propoſition as that for which he brings it. For if, inſtead of $\frac{2}{5}$, he had ſaid, $\frac{4}{9}$, $\frac{1}{2}$, $\frac{1}{100}$, or what elſe he pleaſed; the Demonſtration had been juſt as good as now it is, without changing one ſyllable: That is, it will equally prove the proportion of the Semidiameter to the Quadrantal Arc, to be, *what you pleaſe*: As any may preſently ſee, who doth but read over his Paper.

In his ſecond Paper,

He pretends to *confute a Theorem, which hath a long time paſſed for truth*; (and therefore doth no more concern Dr. *Wallis*, than other men.) And 'tis this, *The four ſides of a ſquare being divided into any number of equal parts, for example, into* 100; *and ſtreight lines drawn through the oppoſite points, which will divide the Squares into* 100 *leſſer Squares: The received opinion* (ſaith he) *and which* Dr. Wallis *commonly uſeth, is, that the Root of thoſe* 100, *namely* 10, *is the ſide of the whole Square.* Which to confute, he tells us, *The Root* 10 *is a number of Squares, whereof the whole contains* 100; *and therefore the Root of* 100 *Squares is* 10 *of thoſe Squares, and not the ſide of any Square; becauſe the ſide of a Square is not a Superficies, but a Line.*

For Anſ. I ſay, that 'tis neither the opinion of Doctor *Wallis*, nor (that I know) of any other (ſo far is it from being a *Received Opinion*, which Maſter *Hobs* inſinuates as ſuch) that 10 is the Root of 100 *Squares* (For ſurely a *Bare Number* cannot be the ſide of a *Square Figure*:) Nor yet (as Maſter *Hobs* would have it) that 10 *Squares* is the Root of 100 *Squares*: But that 10 *Lengths* is the Root of 100 *Squares*. 'Tis true that the *Number* 10 is the Root of the *Number* 100, but not, of a 100 *Squares*: and, that 10 *Squares* is the Root (not of 100 *Squares*, but) of 100 *Squared Squares*: Like as 10 *Douſen* is the Root, not of 100 *Douſen*, but of 100 *Douſen douſen*, or *Squares of a Douſen*. And, as, there,

there, you muſt multiply not only 10 *into* 10, but *Douſen into Douſen*, to have the Square of 10 *Douſen*; ſo here 10 *into* 10 (which makes a 100) and *Length into Length* (which makes a *Square*) to obtain the Square of 10 *Lengths*, which is therefore 100 *Squares*, and 10 *Lengths* the Root or ſide of it. But, ſays he, the Root of 100 *Soldiers*, is 10 *Soldiers*. *Anſwer*. No ſuch matter: For 100 *Soldiers* is not the product of 10 *Soldiers into* 10 *Soldiers*, but of 10 *Soldiers into* the *Number* 10: And therefore neither 10, nor 10 *Soldiers*, the Root of it. So 10 *Lengths* into the *Number* 10, makes no Square, but 100 *Lengths*; but 10 *Lengths* into 10 *Lengths* makes (not 100 *Lengths*, but) 100 *Squares*.

So in all other proportions: As, if the number of *Lengths* in the *Square ſide* be 2; the number of *Squares* in the *Plain* will be *twice two*, (becauſe there will be *two* rows of *two* in a row:) If the number of *Lengths* in the *ſide*, be 3; the number of *Squares* in the *Plain*, will be 3 times 3, or the Square of 3: If that be 4, this will be 4 times 4: And ſo in all other proportions. Of which, if any one doubt he may believe his own eyes *.

* See *Tab.* 1. *n.* VI. VII. VIII. IX.

And this Mr. *Hobs* might have been taught by the next Carpenter (that knows but how to meaſure a Foot of Board) who could have told him, that becauſe the *ſide* of a Square Foot, is 12 *Inches in* Length, the Plain of it will be 12 *times* 12 *Inches in Squares*: Becauſe there will be 12 Rows of 12 in a Row.

His third Paper,

WHich came out juſt as the Anſwer to the two former was going to the Preſs, contains, for ſubſtance, the ſame with his ſecond, and the Latter part of the firſt: And ſo needs no farther Anſwer.

Only I cannot but take notice of his uſual trade of contradicting himſelf. His ſecond Paper ſays, *The ſide of a Square is not a Superficies, but a* Line: His third ſays the quite contrary, (Prop. 1.) *A Square root, (ſpeaking of Quantity) is not a* Line, *but a Rectangle.* Other faults, falſities, and contradictions, there are a great many.

As for Inſtance: He tells us firſt, *In the natural Row of Numbers, as* 1, 2, 3, 4, 5, 6, &c. *every one is the Square of ſome number in the ſame Row*; (that is, of ſome Integer number; which

which is notoriouſly falſe.) This he contradicts in the very next words, *But Square numbers (beginning at* 1*) intermit firſt two numbers, then four, then ſix, &c; ſo that none of the intermitted numbers is a Square number, nor hath any Square root.* (If theſe *intermitted numbers*, between 1, 4, 9, 16, &c. *be not Squares* how is it that *every one* in the whole row is a *Square*, and that of ſome Integer number?) But this again is contradicted *prop.* 2. where 200 (one of ſuch intermitted numbers) is made a *Square*, and $14\frac{4}{14}$ the *Root* of it.

Again; in his *Definition* he tells us, that *a Square Root multiplied into it ſelf produceth a Square:* But (*prop.* 2.) he multiplieth *the Root* $14\frac{4}{14}$ (not into it ſelf, but) into 14 (a part thereof,) to make 200, which he will have to be *the Square* of that Root. Nor is it a meer ſlip of negligence in the computation, but his Rule directs to it; *Any number given is produced by the greateſt Root multiplied into it ſelf, and into the remaining Fraction.* Whereof he gives this inſtance: *Let the number given be* 200 *Squares, the greateſt Root is* $14\frac{4}{14}$ *Squares* (he ſhould rather have ſaid *Lengths*; but that is a ſmall fault with him;) *I ſay, that* 200 *is equal to the product of* 14 *into it ſelf* (*which is* 196,) *together with* 14 *multiplied into* $\frac{4}{14}$ (*which is equal to* 4:) that is $14\frac{4}{14}$ multiplied into 14. But this calculation is again contradicted in his third propoſition, where he calculates *the ſame Square* otherwiſe, as we ſhall ſee by and by. In the mean time let's conſider this alone, and ſee the contradictions within it ſelf. His Rule bids us multiply *the greateſt Root into it ſelf*, &c. This *greateſt Root* he ſays is $14\frac{4}{14}$; yet doth he not multiply this, but 14 (a part thereof) *into it ſelf and into the Fraction* $\frac{4}{14}$. Again; if $14\frac{4}{14}$ be *the greateſt Root*, what ſhall be *the remaining Fraction*? Doth he take the Root of 200 to be more than $14\frac{4}{14}$ by ſome further *remaining Fraction*? If ſo, he ſhould have told us what that Fraction is; for $\frac{4}{14}$ it is not, this being part of his *greateſt Root* $14\frac{4}{14}$. But if we ſhould allow (as I think we muſt,) that by *the greateſt Root* he means ſometimes $14\frac{4}{14}$, ſometimes 14, (that is, if we allow him to contradict himſelf,) yet how comes he by the Fraction $\frac{4}{14}$? For, $\frac{2}{14}$ is too much (the ſquare of $14\frac{2}{14}$ being more then 200, as by multiplying $14\frac{2}{14}$ into it ſelf will appear;) which deſtroys his whole deſign; for 14, multiplied into $14\frac{2}{14}$, will not make 200, but 198; contrary to his rule. But further, it is ſo groſs a miſtake, to make 200 the Square of $14\frac{4}{14}$, that every Apprentice boy, (that can but multiply whole numbers, and fractions,) could have informed him better, who would firſt have reduced the fraction to ſmaller terms, putting $14\frac{2}{7}$ for $14\frac{4}{14}$, and then multiplying $14\frac{2}{7}$ into it ſelf, would have ſhew'd him, that the Square of $14\frac{4}{14}$, that is, $14\frac{4}{14}$ multiplied into it ſelf, is (not 200, but) $204\frac{4}{49}$.

But the Root of 200, is the ſ~~ai~~urd number $10\sqrt{2}$, which is leſs than $14\frac{2}{14}$, and bigger than $14\frac{2}{15}$: the Square of that being ſomewhat more than 200; and, of this, ſomewhat leſs; but either of them within an unite of it.

$14\frac{2}{7}$
$14\frac{2}{7}$
56
14
4
4
$\frac{4}{49}$
$204\frac{4}{49}$

But this ſecond Propoſition, is (as I ſaid) contradicted by his third, which makes the Square of $14\frac{4}{14}$ to be $200\frac{1}{49}$, (by what computation, we ſhall ſee by and by;) and then finds fault, that this and the former do not agree. (But 'tis no wonder they ſhould diſagree, when both are falſe.) *The ſame Square* (ſaith he) *calculated Geometrically, conſiſteth* (*by Euclid.* 2.4.) *of the ſame numeral great Square* 196, *and of two Rectangles under the greateſt ſide* 14 *and the Remainder of the ſide, and further of the Square of the leſs ſegment; which altogether make* $200\frac{1}{49}$. (He might have learned to reckon better; but let us ſee how he makes it out.) *As by the operation it ſelf* (ſaith he) *appeareth thus: The ſide of the greater ſegment is* $14\frac{4}{14}$ (this was, but now, the ſide of the whole ſquare, how comes it now to be but the ſide of the greater Segment?) *which multiplied unto it ſelf* (ſaith he) makes 200: (no; but $204\frac{4}{49}$:) *The product of* 14 *the greateſt Segment into the two Fractions* $\frac{4}{14}$ is 4, *and that added to* 196 *makes* 200: (if by two fractions $\frac{4}{14}$, he mean, as he ought by his Rule, the Fraction 4 twice taken, or the double of it, it will be not 4, but 8, and this added to 196 make 204; But all this he puts in his pocket, for it comes not into account at all.) *Laſtly, the product of* $\frac{2}{14}$ *into* $\frac{2}{14}$, *or* $\frac{1}{7}$ *into* $\frac{1}{7}$ *is* $\frac{1}{49}$; which with the firſt 200 makes $200\frac{1}{49}$: (But he forgets himſelf, for his leſſer ſegment was not $\frac{2}{14}$, but $\frac{4}{14}$; he ſhould therefore have ſaid $\frac{4}{14}$ into $\frac{4}{14}$, or $\frac{2}{7}$ *into* $\frac{2}{7}$, is $\frac{4}{49}$.) His calculation therefore ſhould have been this: The greater ſegment is (not $14\frac{4}{14}$, but) 14; which multiplied into it ſelf makes (not 200, but 196: The Rectangle of the greater ſegment 14, into the leſſer $\frac{4}{14}$, is 4: And this taken a ſecond time, is another 4: The leſſer ſegment (not $\frac{2}{14}$, but) $\frac{4}{14}$, or $\frac{2}{7}$, multiplied into it ſelf, is

(not

(not $\frac{1}{49}$, but) $\frac{4}{49}$: All which added together make not $200\frac{1}{49}$, but $196+4+4+\frac{4}{49}=$) $204\frac{4}{49}$, which is juſt the ſame with $14\frac{4}{14}$ multiplied into it ſelf. So that, had he known how to multiply a number into a number, eſpecially when incumbred with fractions (which it is manifeſt he doth not,) he would have found no diſagreement between the *Arithmetical calculation*, and what he calls the *Geometrical*. But I am aſhamed (for him) that ſo great a pretender to ſuch high things in Geometry, ſhould be ſo miſerably ignorant of the common operations of practical Arithmetick.

His repeated Quadrature he now expreſſeth thus, *The Radius of a Circle is a mean Proportional between the Arc of a Quadrant and two fifths of the ſame.* But inſtead of *two fifths*, he might as well have ſaid the *half*, or *tenth*, or *hundredth part*, &c; or (taking T in DC produced beyond C,) the *double, decuple, centuple, &c.* or *what you pleaſe*: For his Demonſtration would have proved it, which is this. *Deſcribe a Square ABCD, and in it a Quadrant DCA. In the ſide DC* (continued if need be,) *take DT two fifths of DC*, (or its Half, Double, Hundredth part, or what you pleaſe;) *and between DC and DT a mean proportional DR; and deſcribe the Quadrantal Arcs RS, TV. I ſay, the Arc RS is equal to the ſtreight line DC. For ſeeing the proportion of DC to DT is duplicate of the proportion of DC to DR, it will be alſo duplicate of the Proportion of the Arc CA to the Arc RS, and likewiſe duplicate of the Proportion of the Arc RS to the Arc TV. Suppoſe ſome other Arc, leſs or greater than the Arc RS, to be equal to DC, as for example* rs; *Then the proprrtion of the Arc* rs *to the ſtreight line DT will be duplicate of the proportion of RS to TV, or DR to DT, which is abſurd; becauſe D*r *is by conſtruction greater or leſs than DR. Therefore the Arc RS is equal to the ſide DC; which was to be demonſtrated.* Which demonſtration therefore proving indifferently *every* proportion, doth not indeed prove *any*. In brief: The force of his Demonſtration is but this; *DT being to DC as* 2 *to* 5 (or in any other proportion) *and DR a mean proportional between them; RS will be ſo between TV and CA;* *and therefore* rs (*greater or leſs than RS,*) *will not be a mean proportional between TV and CA*: which is true; *but why it may not be equal to DC*, we have nothing but his word for it; there being nothing to ſhew, that *DC is equal to ſuch a mean proportional.* Again; though *rs* be not a mean proportional between TV and CA, yet it may be between *tv* and CA, which ſerves his Demonſtration as well;

which

which is indifferent to any three continual proportionals, as was ſhewed before. So that now we have had three Demonſtrations of this Quadrature, (in his *Roſetum*, in his *firſt* paper, and in his *third*,) and this common fault in all of them, that they equally prove the proportion by him propoſed, or any other what you pleaſe. But ſuch his Demonſtrations uſe to be.

And this is what I thought fit to ſay to Mr. *Hobs's* ~~Four~~ three *Papers* (rather to ſatisfie the importunity of others, than becauſe I thought them worth Anſwering:) And ſubmit the whole, with all Reſpects, to the *Royal Society*, to whom Mr. *Hobs* makes his Appeal.

His Fourth Paper;

WHich came out ſince the *Three former* were anſwer'd, (containing ſome faint endeavors to re-aſſert ſome things in them,) is but meer Trifling, or worſe than ſo.

What he would therein inſinuate concerning *God* (that we may as well prove *Him* to have had a Beginning, as that the World had) ſmells too rank of Mr. *Hobs*. We are not to meaſure Gods *Permanent* Duration of Eternity, by our *ſucceſſive* Duration of Time: Nor, his Intire *Ubiquity*, by Corporeal *Extenſion*.

What in it concerns *Mathematicks*, (whether his own or others,) is ſo weak and trivial, (and ſaid only, that he may ſeem to ſay ſomething, though nothing to the purpoſe,) that I ſhall truſt it with thoſe to whom he makes his appeal, without thinking it to need any Reply; The view of what he writeth againſt, being a ſufficient Anſwer to all he ſaith.

New Obſervations of Spots *in the* Sun; *made at the Royal Academy of* Paris, *the* 11, 12 *and* 13*th of* Auguſt 1671; *and Engliſh't out of the French, as follows.*

IT is now about twenty * years ſince, that Aſtronomers have not ſeen any conſiderable *Spots* in the Sun, though before that time, ſince the Invention of Teleſcopes, they have from time to time obſerved them. The Sun appeared all that while with an entire brightneſs, and Signor *Caſſini* ſaw him ſo the *ninth* of this month of *Auguſt*.

But

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* *See* Numb. 74. p. 2216; *whence it will appear, that ſome ſuch Spots were ſeen here in* London, *A.* 1660. *And Monſ.* Picard *affirm'd to Dr.* Fogelius *at* Hamburg, *that he had ſeen ſome in* October 1661. *witneſs the ſaid* Doctor's *own Letter, written to the Publiſher* Auguſt 11th *laſt.*

Tab. I.

Trans. No 75.